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Cmt

the helix melting points (microfibrillar origin) and a second peak corresponding to cystine decomposition (matrix origin). Spei and Holzem, Colloid & Polymer Sci. 265, 965-970 (1987). However, further studies have shown that the first peak of the doublet, the microfibrillar peak, is more specifically a helix unfolding, superimposed by various decomposition reactions. Id. Herein, the term  $\alpha$ -structure is associated with the doublet peak or peak area though technically the doublet area includes both a crystalline (microfibrillar) and non-crystalline (matrix) contribution. The  $\alpha$ -structure represents the overall integrity of the fiber in an unstressed state. (See Figure 1).

Please replace the sole full paragraph on page 10 with the following new paragraph:

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The greater the peak area, usually expressed in Joules per gram of hair, the higher the percentage of the hair cortex in the  $\alpha$ -structure form. The DSC peak, at 210-250°C, also coincides with the disappearance of the alpha-pattern in the X-ray diffraction. Sandhu and Robbins, J. Soc. Cosmet. Chem., 44, 163-175 (1993). In other words, when normal hair is damaged by heat, chemical treatment, or UV irradiation, a decrease in the doublet peak area of the DSC is observed and the amount of damage can be quantified by the peak area. The correlation between a decrease in DSC peak area and damage to the hair fibers is further verified by a corresponding decrease in the number of disulfide bonds (expressed as half-cystine) in the hair (see Table 1

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below). A decrease in the number of disulfide bonds corresponds to a breakdown in the chemical structure of the hair.

Please replace Table 1, on page 11 with the following new table:

A3  
**Table 1. Effect of Chemical Treatment, Heat, and UV Irradiation on Chemical and Physical Properties of the Hair**

Hair type	Doublet peak area J/g hair	Half-Cystine micromole/g hair
Normal blonde hair	81.57 +/- 8.28	918.7 +/- 165.8
<u>Blonde hair after:</u>		
Perm	54.63 +/- 25.78	810.1 +/- 135.9
Bleach	53.22 +/- 13.12	740.1 +/- 45.9
UV (180 h)	13.98 +/- 11.78	629.7 +/- 8.8
Heat (12 cycles at 130°C)*	18.63 +/- 8.56	654.3 +/- 50.7

\*12 cycles, 1 min each, at 130°C

Please replace the first full paragraph on page 13 with the following new paragraph:

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Derivatives of C3 to C5 monosaccharides are also useful in the compositions and methods of the invention. Exemplary derivatives include, but are not limited to, amine derivatives such as lyxozylimine. For example, ammonias or primary amines may react with the aldehyde or ketone group of a sugar to form an imine, which is a